REMARKS

Upon entry of the foregoing amendments, Claims 1-12 remain pending, Claims 1, 7 and 11 having been amended.

Rejection of the Claims In View Of Saito et al. (JP 11-190236)

Claims 1-12 stand rejected under 35 U.S.C. §102(e) in view of Saito et al. (JP 11-190236). Applicant has amended independent Claims 1, 7 and 11 as discussed below.

Saito discloses a device for suppressing the knocking of a 4-cycle engine comprising means for varying the opening/closing timing of a suction valve and/or an exhaust valve relative to the phase of a crankshaft. The device may also provide feedback control to ignition timing to retard or advance ignition timing depending on whether or not knocking takes place. See Saito et al. abstract.

However, Saito et al. does not disclose, among other limitations, providing a method for adjusting valve timing based on the existence of a pre-ignition vibration within an engine, wherein the method comprises, among other things, adjusting the valve operation following the adjustment of the ignition timing.

Applicant has amended Claim 1 to recite a method for adjusting valve timing based on the existence of a pre-ignition vibration within an engine, the method including, among other steps, "adjusting the valve operation following the adjustment of the ignition timing to maintain the vibration value at or below the first predetermined value." Accordingly, Applicant respectfully submits that amended Claim 1 is allowable over Saito et al. Claims 2-6 depend from Claim 1 and are thus likewise allowable over Saito et al. for at least the same reasons as Claim 1.

Saito et al. also does not disclose, among other limitations, an internal combustion engine comprising, among other things, a control system configured to adjust timing of the ignition system and to control a change mechanism to change the angular position of the camshaft according to a sensed pre-ignition following retardation of ignition timing.

Applicant has amended Claim 7 to recite, among other limitations, "a control system configured to adjust timing of the ignition system and to control the change mechanism to change the angular position of the camshaft according to a sensed pre-ignition following retardation of ignition timing." Accordingly, Applicant respectfully submits that amended Claim 7 is allowable

over Saito et al. Claims 8-10 depend from Claim 7 and are thus likewise allowable over Saito et al. for at least the same reasons as Claim 7.

Saito et al. also does not disclose, among other limitations, an internal combustion engine comprising, among other things, a controller configured to control an ignition timing of an ignition source and to control a valve operation to reduce an amount of air delivered into the combustion chamber following retardation of ignition timing.

Applicant has also amended Claim 11 to recite an internal combustion engine comprising, among other limitations, a "controller configured to control an ignition timing of an ignition source and to control a valve operation to reduce an amount of air delivered into the combustion chamber following retardation of ignition timing." Accordingly, Applicant respectfully submits that amended Claim 11 is allowable over Saito et al. Claim 12 depends from Claim 11 and is therefore also allowable over Saito et al. for at least the same reasons as Claim 11.

Rejection of the Claims In View Of Aoyama et al. (U.S. Pat. No. 6,769,404)

Claims 1-12 stand rejected under 35 U.S.C. §102(e) in view of Aoyama et al. (U.S. Pat. No. 6,769,404). Applicant has amended independent Claims 1, 7 and 11 as discussed below

Aoyama et al. discloses a combustion control system for a spark ignition internal combustion engine that includes a variable piston stroke characteristic mechanism changing a compression ratio of the engine. See '404 patent, abstract. The control system also comprises a knock sensor 38 mounted on the engine to detect cylinder ignition knock (the intensity of detonation or combustion chamber knock). See '404 patent at col. 9, line 66 - col. 10, line 3.

However, Aoyama et al. does not disclose, among other limitations, providing a method for adjusting valve timing based on the existence of a pre-ignition vibration within an engine, wherein the method comprises, among other things, adjusting the valve operation following the adjustment of the ignition timing.

As noted above, Applicant has amended Claim 1 to recite a method for adjusting valve timing based on the existence of a pre-ignition vibration within an engine, the method including, among other steps, "adjusting the valve operation following the adjustment of the ignition timing to maintain the vibration value at or below the first predetermined value." Accordingly, Applicant respectfully submits that amended Claim 1 is allowable over Aoyama et al. Claims 2-

6 depend from Claim 1 and are thus likewise allowable over Aoyama et al. for at least the same reasons as Claim 1.

Aoyama et al. also does not disclose, among other limitations, an internal combustion engine comprising, among other things, a control system configured to adjust timing of the ignition system and to control a change mechanism to change the angular position of the camshaft according to a sensed pre-ignition following retardation of ignition timing.

Applicant has also amended Claim 7 to recite, among other limitations, "a control system configured to adjust timing of the ignition system and to control the change mechanism to change the angular position of the camshaft according to a sensed pre-ignition following retardation of ignition timing." Accordingly, Applicant respectfully submits that amended Claim 7 is allowable over Aoyama et al. Claims 8-10 depend from Claim 7 and are thus likewise allowable over Aoyama et al. for at least the same reasons as Claim 7.

Aoyama et al. also does not disclose, among other limitations, an internal combustion engine comprising, among other things, a controller configured to control an ignition timing of an ignition source and to control a valve operation to reduce an amount of air delivered into the combustion chamber following retardation of ignition timing.

Applicant has also amended Claim 11 to recite an internal combustion engine comprising, among other limitations, a "controller configured to control an ignition timing of an ignition source and to control a valve operation to reduce an amount of air delivered into the combustion chamber following retardation of ignition timing." Accordingly, Applicant respectfully submits that amended Claim 11 is allowable over Aoyama et al. Claim 12 depends from Claim 11 and is therefore also allowable over Aoyama et al. for at least the same reasons as Claim 11.

CONCLUSION

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney in order to resolve such issue promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: June 22, 2005

By: _____

Josué A. Villalta
Registration No. 54,511
Attorney of Record
Customer No. 20,995
(949) 760-0404

AMEND
1783230_1
062205